

CLAIMS

1. Fodder mixing wagon (F), comprising a fodder mixing container (1) having a bottom region (B) and at least one vertical conveying auger (2) above the bottom region (B), the bottom region (B) being suspended on the chassis (M) of a ground undercarriage (A) having wheels (9), **characterised in that** the fodder mixing wagon (F) comprises an active adjusting system (S) for adjusting the fodder distribution within the mixing container (1) in at least two opposed directions substantially parallel to the bottom region (B), the active adjusting system (S) being equipped with at least one sensor arrangement (N, W) for detecting the actual fodder weight distribution within the mixing container (1) and/or the actual inclination of the mixing container (1), respectively, and that actuators (8', 16, 16'') for adjustable counter blades (8) within the mixing container (1) and/or mixing container slanting devices (V) are actuable by the adjusting system (S).
2. Fodder mixing wagon as in claim 1, **characterised in that** the mixing container (1) is adjustable by means of the adjusting system (S) with the bottom region (B) in relation to the ground (G) and in two opposite directions (R) about an, in some cases, virtual, lateral axis (Q) and/or about an, in some cases, virtual, longitudinal axis (L), respectively.
3. Fodder mixing wagon as in claim 2, **characterised in that** the undercarriage (A) includes at least two axes (10), preferably three axes (10).
4. Fodder mixing wagon as in claim 2, **characterised in that** the mixing container (1) is adjustable in conjunction with the chassis (M) of the undercarriage (A) or in relation to the chassis (M) of the undercarriage (A), respectively.
5. Fodder mixing wagon as in claim 2, **characterised in that** the bottom region (B) of the mixing container (1) is adjustable by means of the adjusting system (S) about the lateral axis (Q) and/or the longitudinal axis (L) into a horizontal position (H) in relation to an inclined ground (G).
6. Fodder mixing wagon as in claim 2, **characterised in that** the bottom region (B) of the mixing container (1) is adjustable in relation to a horizontal position (H)

about the lateral axis (Q) and/or the longitudinal axis (L) into a tilted position in relation to a true

horizontal position, preferably into a one-sided lowered tilted position towards a selected delivery region (4, 5) of the mixing container (1).

7. Fodder mixing wagon as in claim 1, **characterised by** an adjusting system comprising at least one mechanic, pneumatic, hydraulic or electric actuator (8', 16, 16') of the counter blades (8) and/or of the slanting device (V).
8. Fodder mixing wagon as in claim 7, **characterised in that** the actuator (16) is arranged between a first suspension location (15) fixed to the chassis and a second suspension location (17) which is movable and is to be fixed in relation to the ground (G), and that the fodder mixing wagon (M) is provided with a tow bar (18) at the chassis (M) which tow bar (18) has a tractor coupling (21, 22) defining the second suspension location (17).
9. Fodder mixing wagon as in claim 8, **characterised in that** a chassis front end structure (14, 14') is provided at the chassis (M), that the chassis front end structure is supported in relation to the mixing container (1) and is provided with the first suspension location (15), that the tow bar (18) is linked to the chassis front end structure in a pivotable fashion about a bending axis (19) substantially parallel to the at least one axis (10) of the undercarriage (A), and that the actuator (16) is provided with a distance below or above the bending axis (19).
10. Fodder mixing wagon as in claim 1, **characterised in that** the actuator (16') is arranged between a first suspension location (15) fixed to the chassis and a second suspension location (17) fixed to the mixing container, that the actuator, preferably, is an air spring bellows or a hydraulic bellows (DH), and that the actuator, preferably, has a total adjustment range allowing an adjustment of at least a part of the bottom region (B) about the lateral axis and/or the longitudinal axis (Q, L) to above and to below of a plane which is parallel to the chassis (M).
11. Fodder mixing wagon as in claim 1, **characterised in that** the adjusting system (S) is provided with at least one mixing container-inclination sensor (N) and/or a weight distribution-weighing sensor (W) for the respective emission of at least one indication, and that the actuator (8', 16, 16') is actuable, preferably, under

consideration of the indication of the sensors (N, W), preferably fully automatic, semi-automatic or manually controlled.

12. Fodder mixing wagon as in claim 11, **characterised in that** the inclination sensor (N) comprises at least one sort of a water level (20).
13. Fodder mixing wagon as in claim 11, **characterised in that** the weighing sensor (W) comprises several, preferably, four, weighing members (WG) which are provided at distributed positions below the bottom region (B) of the mixing container (1), and that the weight distribution indication for the actuation of the respective actuator (16) is derivable from the compared weight measurement results of the weighing members.
14. Fodder mixing wagon as in claim 1, **characterised in that** the adjusting system (S) comprises a control and actuating device (C), preferably an electronic and computerised control and actuating device.
15. Fodder mixing wagon as in claim 14, **characterised in that** the control and actuating device (C) is arranged at the fodder mixing wagon (1) or at the tractor (B) or is arranged portable in a mobile fashion in relation to the tractor and/or to the fodder mixing wagon.
16. Fodder mixing wagon as in claim 14, **characterised in that** the control and actuating device (C) comprises a selection switch (25) allowing to set at least three switching positions (I, II, III), namely for an automatic adjusting operation into a horizontal position, for an automatic adjusting operation for distributing the fodder, and for a manual adjusting operation, respectively.
17. Fodder mixing wagon as in claim 1, **characterised in that** at least one front side and one rear side counter blade (8), preferably pairs of front side and rear side counter blades, are provided in the mixing container (1), and that the front side and the rear side counter blades, preferably the respective pairs of counter blades, are provided for individual or opposed adjustments.
18. Fodder mixing wagon (F) comprising a fodder mixing container (1) having a bottom region (B) and at least two vertical conveying augers (2) above the bottom

region (B), the fodder mixing container (1) being provided on the chassis (M) of an undercarriage (A) travelling on the ground (G) by wheels (9), **characterised by** the combination of the following features;

- a) the bottom region (B) is defined by an essentially plane, thin-walled sheet metal bottom (7') which is stiffened at its lower side at least by enforcing longitudinal beams (38);
- b) the undercarriage (A) is a triaxial or tridem undercarriage;
- c) the bottom region (B) is suspended via supports (P) on the tridem undercarriage (A), preferably via the enforcing beams.

- 19. Fodder mixing wagon as in claim 18, **characterised in that** the tridem undercarriage comprises two longitudinal beams (11), and that the supports (P) either are arranged as a lowered prolongations at the ends of the longitudinal beams or are arranged in lowered positions sideways of the longitudinal beams or are arranged on top of the longitudinal beams (11), respectively, and that at least some of the supports (B) provided are equipped with weighing members (WG).
- 20. Fodder mixing wagon as in claim 19, **characterised in that** spring systems (12) and/or air spring bellows and suspending parts (13) are provided within the tridem undercarriage (A) between each axis (10, 10') interconnecting two wheels (9) and the longitudinal beams (11), and that the longitudinal beams (11) are designed for adjustments together with the suspension parts (13) by means of a mixing container inclination adjusting system (S) within the spring systems (12) or the air spring bellows in relation to the axes (10, 10') about a lateral axis (Q) and/or about a longitudinal axis (L), respectively.
- 21. Fodder mixing wagon as in claim 20, **characterised in that** the adjustment of the longitudinal beams (11) together with the suspension parts (13) is carried out via the adjusting system (S) by varying the actuation of the air spring bellows.
- 22. Fodder mixing wagon as in claim 18, **characterised in that** the tridem undercarriage comprises a first pair of tandem rockers (28) for adjacent first and

second axes (10) and a second pair of tandem rockers (31) for supporting a third axis (10), the second pair of tandem rockers (31) being linked to the first pair of tandem rockers (28) in pivotable fashion between the first and second axes (10), and that at least two supports (P), preferably each equipped with a weighing member (WG), are provided for the mixing container (1) at the second pair of tandem rockers (31) between the third axis (10) and the link points (30) of the second pair of tandem rockers (31) at the first pair of tandem rockers (28).

23. Fodder mixing wagon as in claim 22, **characterised in that** the wheels (9) of the three axes (10) are mounted to the pairs of tandem rockers (28, 31) by means of laterally separated stud axes (10') and that at least the wheels of the first and third axes (10) comprise steerable wheel hubs (29).